

# Service Manual

Black and White Television

## TR-565ES/TR-565EU

## Chassis No. T505-E

File with TR-525ES service manual.

Model TR-565ES/565EU is the same model TR-525ES except as specified herein.

For complete service information, refer to TR-525ES service manual.

Bitte ins Handbuch TR-525ES einordnen!

Modell TR-565ES/565EU ist ausser der Beschreibung hier gleich mit dem Modell TR-525ES.

Vollständige Auskünfte zum Kundendienst seien auf das Service-Handbuch für TR-525ES verwiesen.



(TR-565ES)



(TR-565EU)

### Specifications

Power Source:	AC: 220V 50Hz
Power Consumption:	AC: 14W
Antenna:	UHF/VHF Monopole Antenna 75 Ohm Unbalanced Type UHF and VHF External Antenna 75 Ohm Balanced Type
Receiving Channel:	VHF CH. 2-12 UHF CH. 21-69 C.C.I.R. Standard
Intermediate Frequency:	VIDEO I-F 38.9MHz SOUND I-F 33.4MHz
Picture Tube:	5" 14cm (140BEB4) 55° Deflection Aluminized
Transistors:	24
Diodes:	19 1 Thermistor
High Voltage Rectifier:	1 (TVM567)
IC:	1 (AN240)
Automatic Control Circuits:	Keyed AGC (Automatic Gain Control) Saw-Tooth AFC (Automatic Frequency Control) AVR (Automatic Voltage Regulator)
Dimensions:	Height: 13.5cm Width: 41.5cm Depth: 27.0cm
Weight:	4.5kg

### Technische Daten

Stromversorgung:	Netz: 220V 50Hz
Stromverbrauch:	Netz: 14W
Antenne:	UHF/VHF Monopole Antenne 75 Ohm Asymmetrisch UHF/VHF Aussenantenne 300 Ohm Symmetrisch
Empfangskanäle:	VHF Kanäle 2-12 UHF Kanäle 21-69 Nach C.C.I.R. - Norm
Zwischenfrequenzen:	Video-ZF 38,9MHz TON-ZF 33,4MHz
Bildröhre:	14cm (140BEB4) 55° Ablenkung
Transistoren:	24
Dioden:	19 1 Thermistren
Hochspannung Gleichrichter:	1 (TVM567)
ICs:	1 (AN240)
Automatische Regelschaltungen Schaltungen:	Unverzögerte Schwundregelung Automatische Kippfrequenzregelung Automatische Spannungskonstanzhaltung
Abmessungen:	Hohe: 13.5cm Breite: 41.5cm Tiefe: 27.0cm
Gewicht:	4.5kg.



Matsushita Electric Trading Co., Ltd.  
P.O. Box 288, Central Osaka Japan

CODE NO. TED. 7709-196F

## HOW TO REMOVE REAR COVER

1. Remove 5 screws (A) in fig.1 and 2.
2. Remove the rear cover as in fig.3.

## HOW TO REMOVE TOP COVER

1. Remove 2 screws (B) in fig.4.  
(Other 2 screws are located at the opposite side)
2. Pull the top cover upward to remove.

## HOW TO REMOVE MAIN BOARD

1. Disconnect each clampers
2. Pull the main board toward you.

## HOW TO REMOVE TUNER BLOCK

1. Remove channel selector knobs.
2. Remove 3 screws (C) in fig.5.

## HOW TO REMOVE CONTROL BLOCK

1. Remove contrast and brightness knobs.
2. Remove 2 screws (D) in fig.5.

## ENTFERNEN DER RÜCKWAND

1. Entfernen Sie die 5 Schrauben (A), Abb. 1 und 2.
2. Entfernen Sie die Rückwand, Abb.3.

## ENTFERNEN DER OBEREN VERKLEIDUNG

1. Entfernen Sie die 2 Schrauben (B), Abb.4.  
(Die 2 anderen Schrauben befinden sich an der entgegengesetzten Seite)
2. Ziehen Sie die obere Verkleidung zum Entfernen nach oben.

## ENTFERNEN DER HAUPTSCHALTТАFEL

1. Unterbrechen Sie jede einzelne Klemme.
2. Ziehen Sie die Hauptschalttafel in Ihre Richtung.

## ENTFERNEN DES TUNERBLOCKS

1. Entfernen Sie Kanalwählerknöpfe.
2. Entfernen Sie die 3 Schrauben (C), Abb.5.

## ENTFERNEN DES EINSTELLBLOCKS

1. Entfernen Sie die Knöpfe für Kontrast und Helligkeit.
2. Entfernen Sie die 2 Schrauben (D), Abb.5.

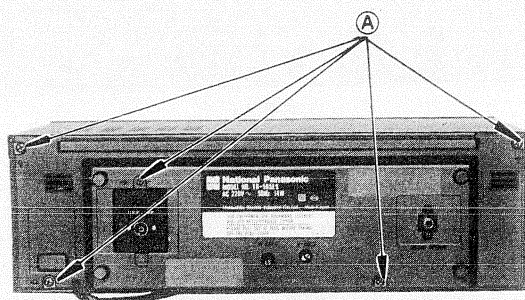


Fig.1

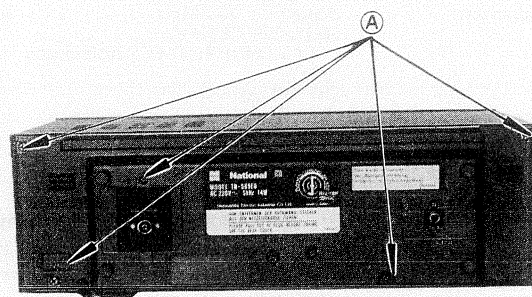


Fig.2



Fig.3

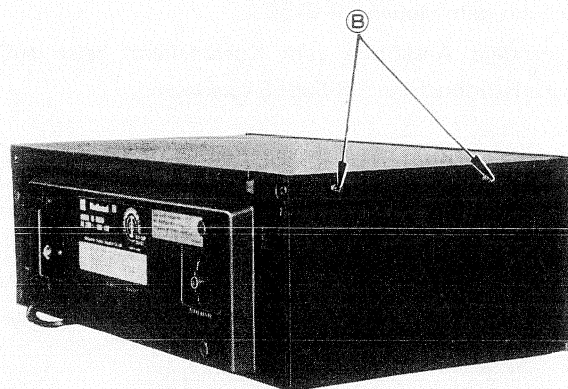


Fig.4

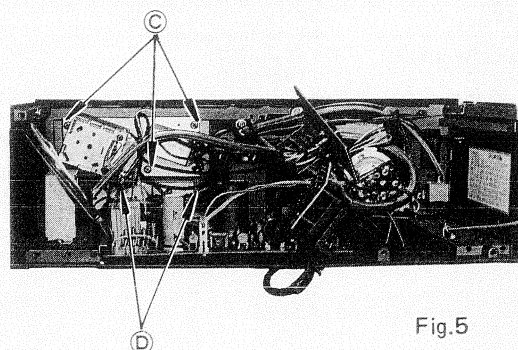


Fig.5



# MAIN CIRCUIT BOARD

CONDUCTOR VIEW  
TNP81822-3CH  
(CHASSIS NO. T505-E)

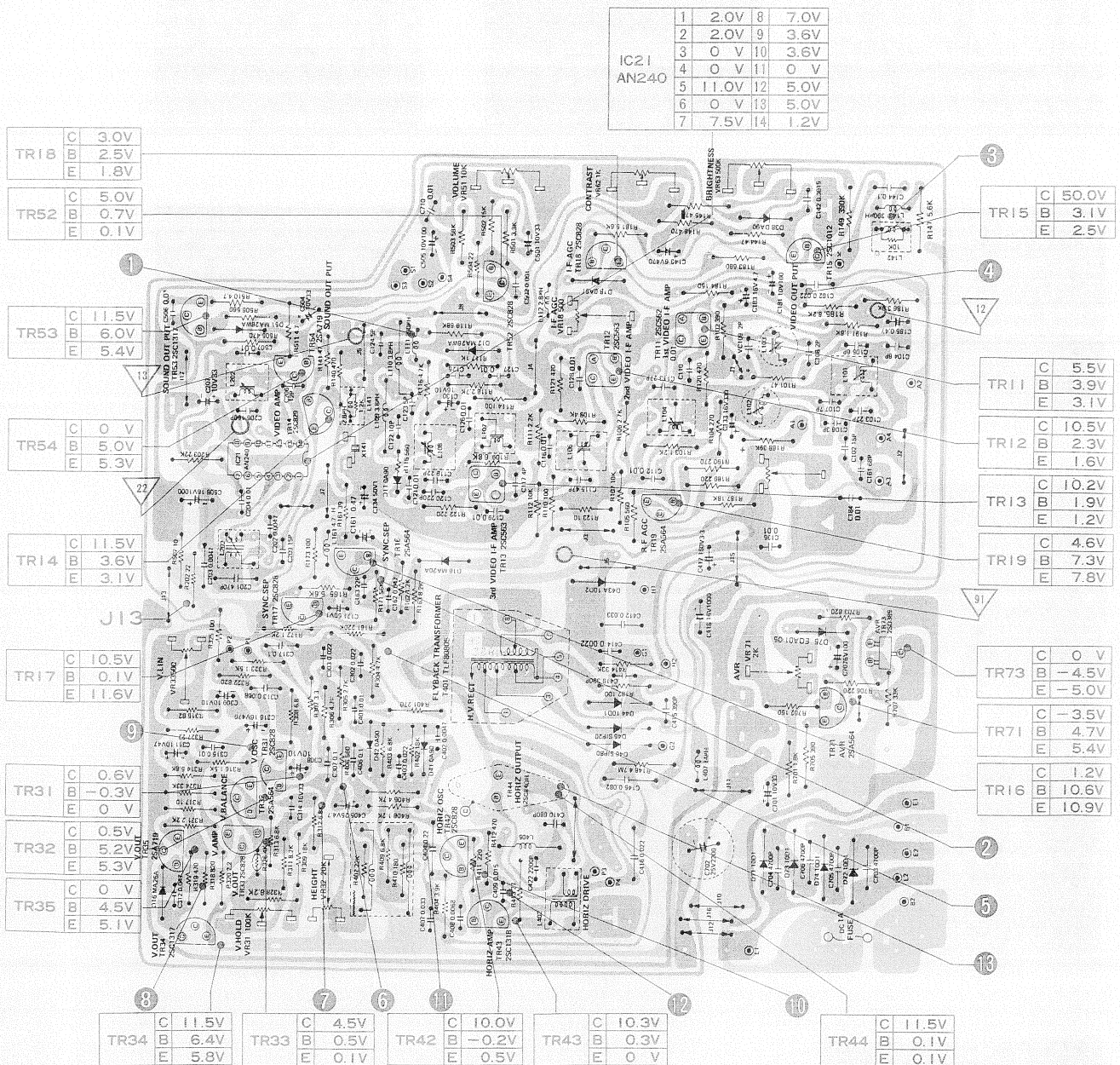


Fig. 13 Abb. 13

## WAVEFORM PATTERN

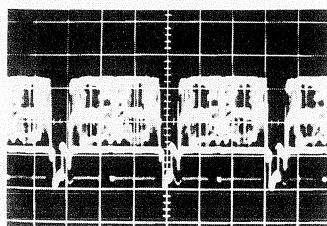
## WELLENFORMABBILDUNG

These waveforms were taken with C.C.I.R. (VHF) signal.

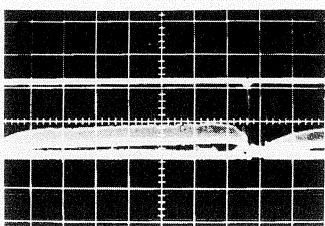
The peak to peak voltage were measured setting brightness and contrast controls at maximum position.

Diese Wellenformen wurden mit C.C.I.R. (VHF) Signal gemessen.

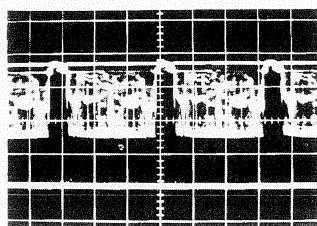
Die s/s Volt Messung wurde erreicht mit Helligkeit und Kontrast Wahlschalter in Stellung Maximum.



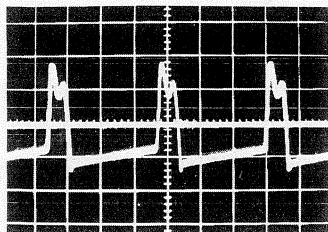
① 0.65Vp-p



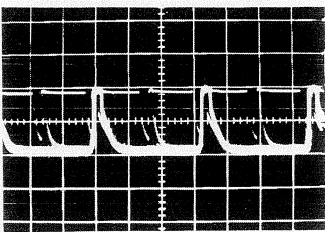
② 12Vp-p



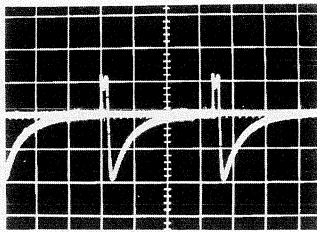
③ 40Vp-p



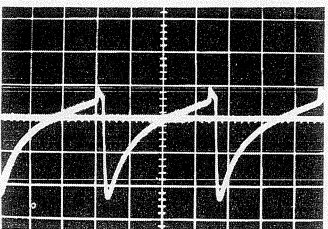
④ 18Vp-p



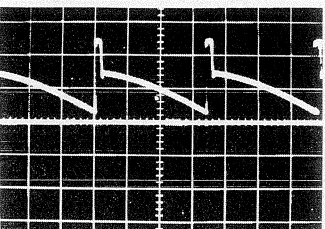
⑤ 10Vp-p



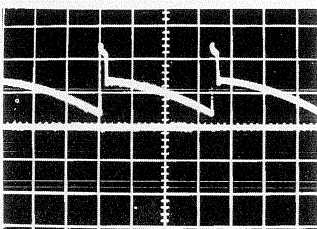
⑥ 3Vp-p



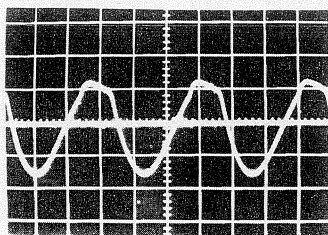
⑦ 1.2Vp-p



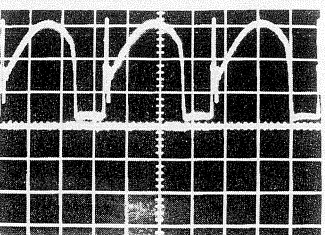
⑧ 12Vp-p



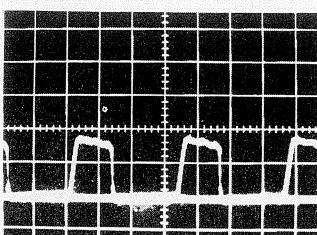
⑨ 13Vp-p



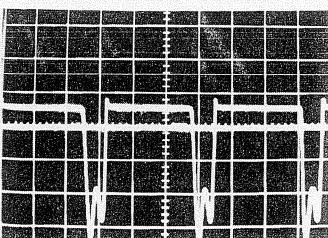
⑩ 6Vp-p



⑪ 15Vp-p



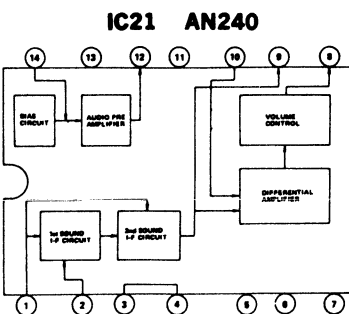
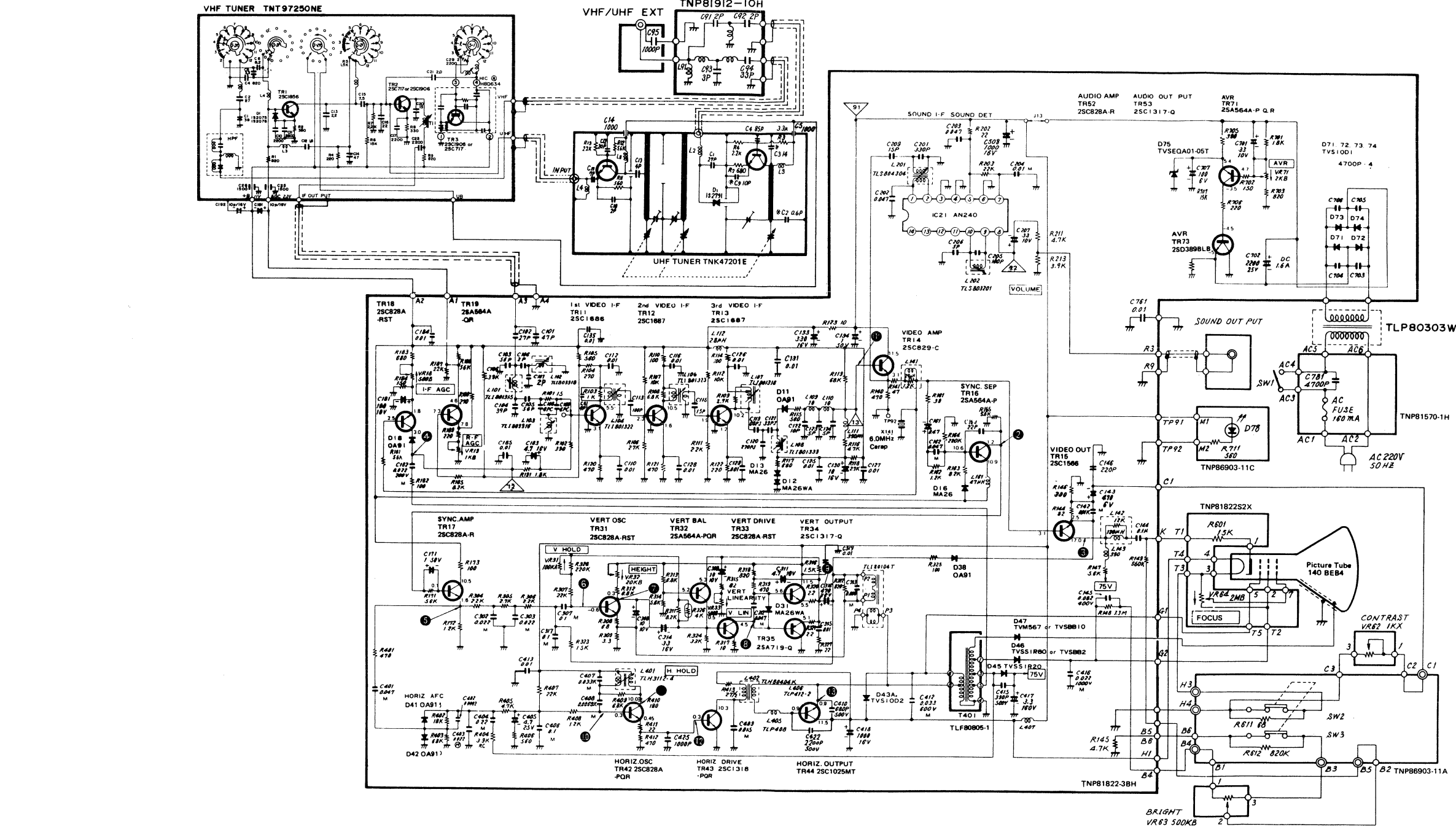
⑫ 0.8Vp-p



⑬ 80Vp-p

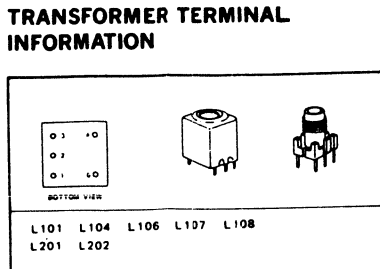


SCHEMATIC DIAGRAM FOR MODELS TR-565ES/565EU



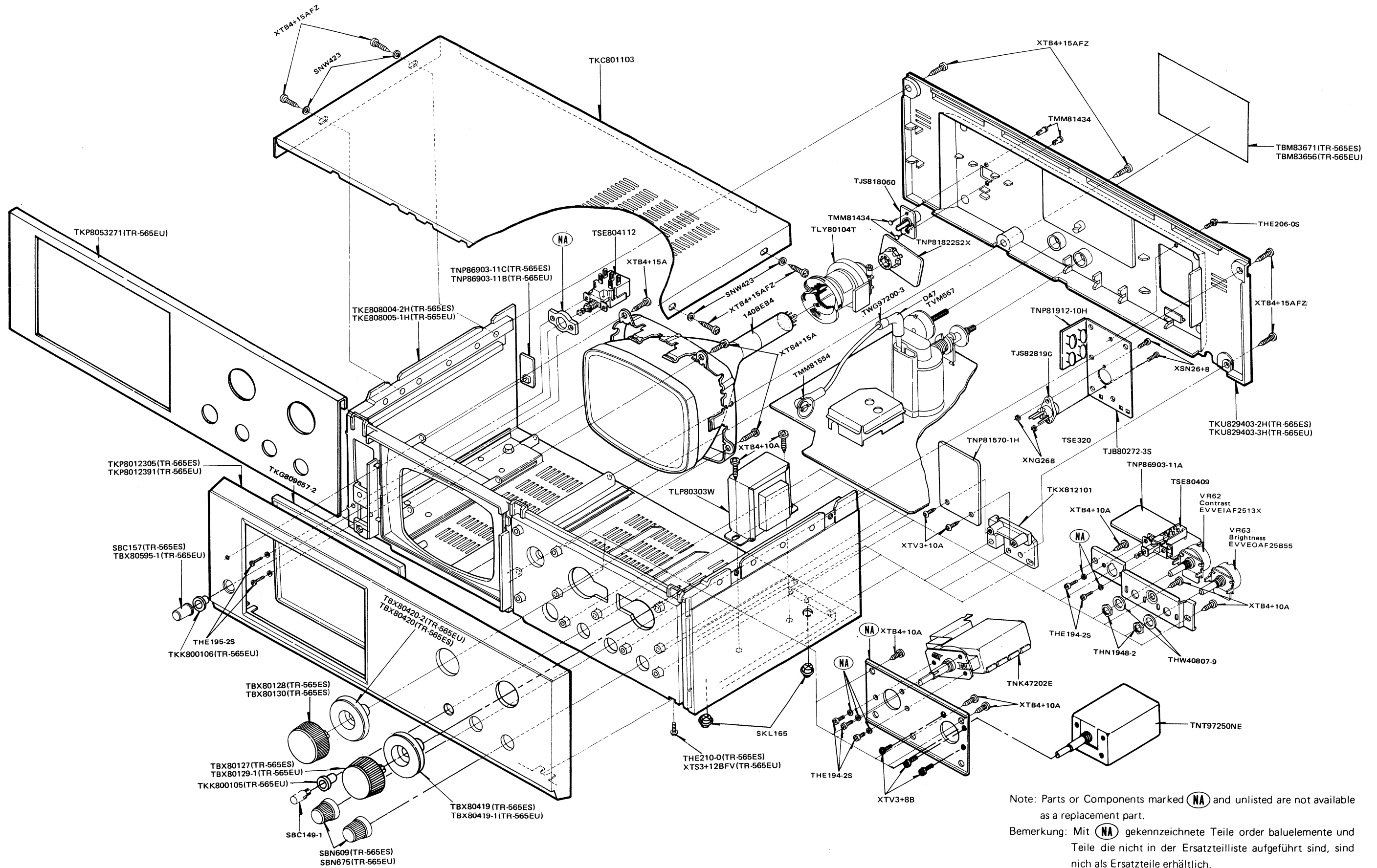
TRANSISTOR BASE INFORMATION

2SC761	2SC683	2SC761 2SC948	2SA683 2SA751 2SC1383	2SC901A
2SA564A 2SC828A 2SC829	2SC1012	2SA680 2SC1226	2SC562 2SC563	2SD389



- NOTE
1. RESISTOR  
All resistors are carbon 1/4W resistor, unless otherwise noted the following marks.  
Unit of resistance is OHM (Ω). (K=1,000, M=1,000,000)  
△: Solid resistor  
□: Wire wound resistor  
○: Fuse resistor
  2. CAPACITOR  
All capacitors are ceramic 50V capacitor, unless otherwise noted the following marks.  
Unit of capacitance is μF, unless otherwise noted.  
⊙: Polyester capacitor  
⊕: Polystyrene capacitor  
⊖: Electrolytic capacitor
  3. COIL  
Unit of inductance is μH.
  4. TEST POINT  
▽: Test point position
  5. VOLTAGE MEASUREMENT  
Voltage is measured by a volt ohm meter with DC 20K OHM/V receiving normal signal, when all controls are set to the maximum position.
  6. Number in red circle indicates waveform number.
  7. When arrow mark (↗) is found, connection is easily found along with the direction of an arrow.
  8. When schematic diagram of a board is described in more than two places, they are encircled with dotted line (---).
  9. This schematic diagram is the latest at the time of printing and subject to change without notice.

# EXPLODED VIEW





## ERSATZTEILLISTE

Note: TNP81822-3CH (Main Board) is not available as a complete printed circuit board.

Bemerkung: TNP81822-3CH die gedruckte schaltung ist nicht als komplet bestückte einheit lieferbar.

**(TR-565ES Only)**

REF. NO.	PARTSNO.	PART NAME & DESCRIPTION	REF. NO.	PART NO.	PART NAME & DESCRIPTION
<b>CABINET PARTS</b>			<b>OTHER PARTS</b>		
	TKE808004-2H TKP8012305 TKC801103 TKU829403-2H TBM83671	Escutcheon Complete Front Panel Complete Upper Plate Rear Cover Complete Model Plate	C191 C192 C195	ECEA16V10L ECEA16V10L ECKD2H102PE	Electrolytic 10μF 16V Electrolytic 10μF 16V Ceramic 1000PF+100%-0% 500V
	TKG809657-2 TBX80127 TBX80419 TBX80128 TBX80420	Front Glass VHF Inner Knob VHF Outer Knob UHF Inner Knob UHF outer knob	<b>TNP86903-11C</b>		
	SBC157 SBN609 SBC149-1 TKX812101 SKL165	Power Switch Knob Small Knob Picture Switch Knob AC Bracket Set Let	D77 R711	LN36D ERD14TJ561	Radiation Diode Carbon 560Ω ±5% ¼W
	140BEB4	Picture Tube	<b>TNP86903-11A</b>		
	TNP81570-1H TNP81912-10H	Power Circuit Board Complete U/V Signal Separator Circuit Board Complete	R611 R612	TSE80409 ERD14FJ680 ERC12GJ125	Picture Switch Carbon 68Ω ±5% ¼W Solid 1.2MΩ ±5% ¼W
	TNP86903-11A	Picture Switch Circuit Board Complete	<b>TNP81570-1H</b>		
	TNP86903-11C TNP81822S2X	Radiation Plate Circuit Board Complete Picture Tube Socket Circuit Board Complete	C781 C782	ECKDDS472ME ECKDDS472ME TJC3316	Ceramic 4700PF ±20% 250V Ceramic 4700PF ±20% 250V Fuse Holder
	TNT97250NE TNK47201E TLP80303W	VHF Tuner UHF Tuner Power Transformer	<b>TNP81912-10H</b>		
	TLY80104T TSE80412 XBAT62161 TSX189-1 TSX8201	Deflection Yoke Power Switch Fuse 16mA Power Cord Audio Cord	C91 C92 C93 C94 L91	ECCD2H020C ECCD2H020C ECCD2H030C ECCD2H330K TLR809428	Ceramic 2PF ±0.25PF 500V Ceramic 2PF ±0.25PF 500V Ceramic 3PF ±0.25PF 500V Ceramic 33PF ±10% 500V Balun Coil
	TJB80272-3S TJS828190 TJS818060 EVVEIAF2513X EVVEOAF25B55	Antenna Terminal Board Complete 75Ω Terminal Phono Pin Terminal Contrast Control Brightness Control	<b>SCREWS &amp; WASHERS</b>		
VR62 VR63	TVM567 TWG97200-3 TMM81554 TPC811243 TXAPD2510E	High Voltage Rectifier High Voltage Wire With Cap Selen. Cap Outer Carton Filler Complete		XTV3+10A TMM81434 XTB4+15AFZ  THE206-OS  SNW423  XTB4+10A  THE210-0 XTB4+15A THE195-2S XTV3+8B  THE194-2S XSN26+8 XNG26B THN1948-2 THW40807-9  THE194-2S	AC Bracket Mounting Screw Phono Pin Terminal Mounting Rivete Rear Cover, Upper Plate Mounting Screw Antenna Terminal Board Mounting Screw Upper Plate Mounting Washer  Tuner Block, Control Block Power Transformer Mounting Screw Panel Mounting Screw Picture Tube Mounting Screw Power Switch Mounting Screw VHF Tuner Mounting Screw  UHF Tuner Mounting Screw 75Ω Terminal Mounting Screw 75Ω Terminal Mounting Nut Control Mounting Nut Control Mounting Washer  Picture Switch Mounting Screw
D47	TPE84026 TQB811105 TQB82558 TQB810105	Set Cover Fan Bag Instruction Book Instruction Sheet			

REF. NO.	PART NO.	PART NAME & DESCRIPTION	REF. NO.	PART NO.	PART NAME & DESCRIPTION
<b>CABINET PARTS</b>				TPE84026 TQB811104 TQB810104	Set Cover Fan Bag Instruction Sheet
	TKE808005-1H TKP8012391 TKP8053271 TKC801103 TKU829403-3H	Escutcheon Complete Front Panel Complete Aluminum Panel Upper Plate Rear Cover Complete	<b>OTHER PARTS</b>		
	TBM83656 TKG809657-2 TBX80129-1 TBX80419-1 TBX80130	Model Plate Front Glass VHF Inner Knob VHF Outer Knob UHF Inner Knob	C191 C192 C195	ECEA16V10L ECEA16V10L ECKD2H102PE	Electrolytic Capacitor 10UF 10V Electrolytic Capacitor 10UF 10V Ceramic Capacitor 1000PF +100%-0% 500V
	TBX80420-2 TBX80595-1 SBN675 TBX80610-1 TKX812101	UHF Outer Knob Power Switch Knob Small Knob Picture Switch Knob AC Bracket	<b>TNP86903-11B</b>		
	TKK800105 TKK800106 SKL165 140BEB4	Knob Sleeve (Small) Knob Sleeve (Big) Set Leg Picture Tube	D77 R711	LN26D ERD14TJ561	Radiation Diode Carbon Resistor 560Ω ±5% ¼W
	TNP81570-1H TNP81912-10H  TNP86903-11A	Power Circuit Board Complete U/V Signal Separator Circuit Board Complete Picture Switch Circuit Board Complete	<b>TNP86903-11A</b>		
	TNP86903-11B TNP81822S2X	Radiation Plate Circuit Board Complete Picture Tube Socket Circuit Board Complete	R611 R612	TSE80409 ERD14FJ680 ERC12GJ125	Picture Switch Carbon Resistor 68Ω ±5% ¼W Solid Resistor 1.2MΩ ±5% ½W
	TNT97250NE TNK47201E	VHF Tuner UHF Tuner	<b>TNP81570-1H</b>		
	TLP80303W TLY80104T TSE80412 XBAT62161 TSX189-1	Power Transformer Deflection Yoke Power Switch Fuse 160 mA Power Cord	C781 C782	ECKDDS472ME ECKDDS472ME TJC3316	Ceramic Capacitor 4700PF ±20% 250V Ceramic Capacitor 4700PF ±20% 250V Fuse Holder
	TSX8201 TJB80272-3S TJS828190 TJS818060 EVVE1AF2513X	Audio Cord Antenna Terminal Board Complete 75Ω Terminal Phono Pin Terminal Contrast Control 1KΩX	<b>TNP81912-10H</b>		
VR62	EVVE0AF25B55 TVM567 TWG97200-3 TMM81554 TPC811242	Brightness Control 500KΩB High Voltage Rectifier High Voltage Wire with Cap Selen Cap Outer Carton	C91 C92 C93 C94 L91	ECCD2H020C ECCD2H020C ECCD2H030C ECCD2H330K TLR809428	Ceramic Capacitor 2PF ±0.25% 500V Ceramic Capacitor 2PF ±0.25% 500V Ceramic Capacitor 3PF ±0.25% 500V Ceramic Capacitor 33PF ±10% 500V Balun Coil
VR63 D47	TXAPD2510E	Filler Complete	<b>SCREWS &amp; WASHERS</b>		
				XTV3+10A TMM81434 XTB4+15AFZ THE206-0S	AC Bracket Mounting Screw Phono Pin Terminal Mounting Rivete Rear Cover, Upper Plate Mounting Screw Antenna Terminal Board Mounting Screw
				SNW423 XTB4+10A XTS3+12BFBV XTB4+15A THE195-2S	Upper Plate Mounting Washer Tuner Block, Control Block, Power Trans Panel Mounting Screw Picture Tube Mounting Screw Power Switch Mounting Screw
				XTV3+8B THE194-2S XSN26+8 XNG26B THN1948-2	VHF Tuner Mounting Screw UHF Tuner Mounting Screw 75Ω Terminal Mounting Screw 75Ω Terminal Mounting Screw Control Mounting Nut
				THW40807-9 THE194-2S	Control Mounting Washer Picture Switch Mounting Screw



REF. NO.	PART NO.	PART NAME & DESCRIPTION	REF. NO.	PART NO.	PART NAME & DESCRIPTION
<b>MAIN CIRCUIT BOARD TNP81822-3CH</b>			L402	TLH80404K	Horiz. Drive
<b>TRANSISTORS</b>			L405	TLP408	Choke Coil
TR11	2SC1686	1st Video-IF	L406	TLP412-2	Choke Coil
TR12	2SC1687	2nd Video-IF	L407	TLH3802C	Horiz. Width
TR13	2SC1687	3rd Video-IF	<b>RESISTORS</b>		
TR14	2SC829C	Video AMP	R101	ERD14TJ150	Carbon 15Ω ±5% ¼W
TR15	2SC1566	Video Output	R102	ERD14TJ391	Carbon 390Ω ±5% ¼W
TR16	2SA564A	Sync. Sep.	R103	ERD14TJ102	Carbon 1KΩ ±5% ¼W
TR17	2SC828A	Sync. AMP	R104	ERD14TJ271	Carbon 270Ω ±5% ¼W
TR18	2SC828A	IF AGC	R105	ERD14TJ561	Carbon 560Ω ±5% ¼W
TR19	2SA564A	RF AGC	R106	ERD14TJ272	Carbon 2.7KΩ ±5% ¼W
TR31	2SC828A	Vert. Osc.	R107	ERD14TJ103	Carbon 10KΩ ±5% ¼W
TR32	2SA564A	Vert. Balance	R108	ERD14TJ682	Carbon 6.8KΩ ±5% ¼W
TR33	2SC828A	Vert. Drive	R109	ERD14TJ222	Carbon 2.2KΩ ±5% ¼W
TR34	2SC1317	Vert. Output	R110	ERD14TJ101	Carbon 100Ω ±5% ¼W
TR35	2SA719	Vert. Output	R111	ERD14TJ222	Carbon 2.2KΩ ±5% ¼W
TR42	2SC828A	Horiz. Osc.	R112	ERD14TJ103	Carbon 10KΩ ±5% ¼W
TR43	2SC1318	Horiz. Drive	R114	ERD14TJ101	Carbon 100Ω ±5% ¼W
TR44	2SC1025MT	Horiz. Output	R115	ERD14TJ561	Carbon 560Ω ±5% ¼W
TR71	2SA564A	AVR	R116	ERD14TJ472	Carbon 4.7KΩ ±5% ¼W
TR73	2SD389B LB	AVR	R117	ERD14TJ681	Carbon 680Ω ±5% ¼W
<b>DIODES</b>			R118	ERD14TJ272	Carbon 2.7KΩ ±5% ¼W
D11	OA91	Video Detector	R119	ERD14TJ683	Carbon 68KΩ ±5% ¼W
D12	MA26WA	Blanking	R120	ERD14TJ471	Carbon 470Ω ±5% ¼W
D13	MA26	Blanking	R121	ERD14TJ471	Carbon 470Ω ±5% ¼W
D16	MA26	Sync. Sep.	R122	ERD14TJ221	Carbon 220Ω ±5% ¼W
D18	OA91	IF AGC	R123	ERD14FJ100	Carbon 10Ω ±5% ¼W
D31	MA26WA	Balance	R140	ERD14TJ471	Carbon 470Ω ±5% ¼W
D38	OA91	Temperature Control	R141	ERD14TJ470	Carbon 47Ω ±5% ¼W
D41	OA91	Horiz. AFC	R144	ERD14TJ820	Carbon 82Ω ±5% ¼W
D42	OA91	Horiz. AFC	R145	ERC12GJ473	Solid 47KΩ ±5% ¼W
D43A	TVS10D2	Damper	R146	ERD14TJ391	Carbon 390Ω ±5% ¼W
D43B	TVS10D2	Damper	R147	ERC12GJ562	Solid 5.6KΩ ±5% ¼W
D45	TVSS1R20	Rectifier	R148	ERC12GJ335	Solid 3.3MΩ ±5% ¼W
D46	TVSS1R80	Focus	R149	ERC12GJ564	Solid 560KΩ ±5% ¼W
D71	TVS10D1	Power Rectifier	R161	ERD14TJ390	Carbon 39Ω ±5% ¼W
D72	TVS10D1	Power Rectifier	R162	ERD14TJ122	Carbon 1.2KΩ ±5% ¼W
D73	TVS10D1	Power Rectifier	R163	ERD14TJ822	Carbon 8.2KΩ ±5% ¼W
D74	TVS10D1	Power Rectifier	R164	ERD14TJ224	Carbon 220KΩ ±5% ¼W
D75	TVSEQA01-05T	Zener	R165	ERD14TJ562	Carbon 5.6KΩ ±5% ¼W
<b>IC</b>			R171	ERD14TJ563	Carbon 56KΩ ±5% ¼W
IC21	AN240	Audio	R172	ERD14TJ122	Carbon 1.2KΩ ±5% ¼W
<b>COILS</b>			R173	ERD14TJ101	Carbon 100Ω ±5% ¼W
L101	TLI801315	Video-IF Input Coil	R181	ERD14TJ562	Carbon 5.6KΩ ±5% ¼W
L102	TLI33054-3	Trap Coil	R182	ERD14FJ101	Carbon 100Ω ±5% ¼W
L103	TLI33053-3	Trap Coil	R183	ERD14TJ681	Carbon 680Ω ±5% ¼W
L104	TLI801322	1st Video-IF Transformer	R184	ERD14TJ151	Carbon 150Ω ±5% ¼W
L106	TLI801323	2nd Video-IF Transformer	R185	ERD14TJ822	Carbon 8.2KΩ ±5% ¼W
L107	TLI801318	3rd Video-IF Transformer	R186	ERD14TJ392	Carbon 3.9KΩ ±5% ¼W
L108	TLI801339	Video Detector Transformer	R187	ERD14TJ183	Carbon 18KΩ ±5% ¼W
L109	TLQ100-999	Peaking Coil 10μH	R188	ERD14TJ563	Carbon 56KΩ ±5% ¼W
L110	TLQ100-999	Peaking Coil 10μH	R189	ERD14TJ221	Carbon 220Ω ±5% ¼W
L111	TLT391-999	Peaking Coil 390μH	R190	ERD14TJ271	Carbon 270Ω ±5% ¼W
L112	TLT028-999	Peaking Coil 2.8μH	R191	ERD14TJ182	Carbon 1.8KΩ ±5% ¼W
L141	TLU028-122	Peaking Coil 2.8μH	R202	ERD14FJ220	Carbon 22Ω ±5% ¼W
L142	TLU121-123	Peaking Coil 120μH	R203	ERD14TJ223	Carbon 22KΩ ±5% ¼W
L143	TLT391-999	Peaking Coil 390μH	R211	ERD14TJ472	Carbon 4.7KΩ ±5% ¼W
L161	TLT470-999	Peaking Coil 47μH	R213	ERD14TJ392	Carbon 3.9KΩ ±5% ¼W
L201	TLS804304	Sound-IF Input Coil	R304	ERD14TJ222	Carbon 2.2KΩ ±5% ¼W
L202	TLS803201	Sound-IF Input Coil	R305	ERD14TJ272	Carbon 2.7KΩ ±5% ¼W
L401	TLH3112-4	Horiz. Hold	R306	ERD14TJ222	Carbon 2.2KΩ ±5% ¼W
			R307	ERD14TJ223	Carbon 22KΩ ±5% ¼W
			R308	ERD14TJ6R8	Carbon 6.8Ω ±5% ¼W
			R309	ERD14TJ3R3	Carbon 3.3Ω ±5% ¼W
			R311	ERD14TJ822	Carbon 8.2KΩ ±5% ¼W

REF. NO.	PART NO.	PART NAME & DESCRIPTION					REF. NO.	PART NO.	PART NAME & DESCRIPTION				
R312	ERD14TJ682	Carbon	6.8K $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C133	ECEA16V330L	Electrolytic	330 $\mu F$		16V	
R313	ERD14TJ682	Carbon	6.8K $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C134	ECEA50V1L	Electrolytic	1 $\mu F$		50V	
R314	ERD14TJ562	Carbon	5.6K $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C142	ECQM05102KZ	Polyester	1000PF	$\pm 10\%$	50V	
R315	ERD14TJ820	Carbon	82 $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C143	ECEA6V470L	Electrolytic	470 $\mu F$		6V	
R316	ERD14TJ152	Carbon	1.5K $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C144	ECQM05104KZ	Polyester	0.1 $\mu F$	$\pm 10\%$	50V	
R317	ERD14TJ100	Carbon	10 $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C145	ECQM4823KZ	Polyester	0.082 $\mu F$	$\pm 10\%$	400V	
R318	ERD14TJ821	Carbon	820 $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C146	ECCD1H221K	Ceramic	220PF	$\pm 10\%$	50V	
R319	ERD14TJ471	Carbon	470 $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C161	ECEA50ZR47M	Electrolytic	0.47 $\mu F$		50V	
R320	ERD14FJ2R2	Carbon	2.2 $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C162	ECQM05473KZ	Polyester	0.047 $\mu F$	$\pm 10\%$	50V	
R321	ERD14FJ2R2	Carbon	2.2 $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C163	ECCD1H220K	Ceramic	22PF	$\pm 10\%$	50V	
R322	ERD14TJ821	Carbon	820 $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C171	ECEA50V1L	Electrolytic	1 $\mu F$		50V	
R323	ERD14TJ152	Carbon	1.5K $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C181	ECEA10V100L	Electrolytic	100 $\mu F$		10V	
R324	ERD14TJ333	Carbon	33K $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C182	ECQM2223KZ	Polyester	0.022 $\mu F$	$\pm 10\%$	200V	
R325	ERD14TJ101	Carbon	100 $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C183	ECSZ16EF4R7	Electrolytic	4.7 $\mu F$		16V	
R326	ERTD3ZHL402S	Thermistor	4K $\Omega$		$\frac{1}{4}W$		C184	ECKD1H103PF	Ceramic	0.01 $\mu F$ +100%—0%		50V	
R327	ERD14TJ220	Carbon	22 $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C185	ECEA50V1L	Electrolytic	1 $\mu F$		50V	
R328	ERD14TJ224	Carbon	220K $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C201	ECQS1331J	Styrol	330PF	$\pm 5\%$	100V	
R401	ERD14TJ471	Carbon	470 $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C202	ECKD1H473ZF	Ceramic	0.047 $\mu F$ +80%—20%		50V	
R402	ERD14TJ183	Carbon	18K $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C203	ECKD1H473ZF	Ceramic	0.047 $\mu F$ +80%—20%		50V	
R403	ERD14TJ682	Carbon	6.8K $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C204	ECQM05103KZ	Polyester	0.01 $\mu F$	$\pm 10\%$	50V	
R404	ERC12GJ392	Solid	3.9K $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C205	ECQS1101J	Styrol	100PF	$\pm 5\%$	100V	
R405	ERD14TJ472	Carbon	4.7K $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C206	ECCD1H080DC	Styrol	8PF	$\pm 0.5PF$	50V	
R406	ERD14TJ561	Carbon	560 $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C207	ECEA10V33L	Electrolytic	33 $\mu F$		10V	
R407	ERD14TJ223	Carbon	22K $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C209	ECCD1H150J	Ceramic	15PF	$\pm 5\%$	50V	
R408	ERD14TJ122	Carbon	1.2K $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C302	ECQM05223KZ	Polyester	0.022 $\mu F$	$\pm 10\%$	50V	
R409	ERD14TJ682	Carbon	6.8K $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C303	ECQM05223KZ	Polyester	0.022 $\mu F$	$\pm 10\%$	50V	
R410	ERD14TJ181	Carbon	180 $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C307	ECQM05104KZ	Polyester	0.1 $\mu F$	+100%—0%	50V	
R411	ERD14TJ220	Carbon	22 $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C308	ECSZ10EF10N	Electrolytic	10 $\mu F$		10V	
R412	ERD14TJ471	Carbon	470 $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C309	ECSZ10EF10N	Electrolytic	10 $\mu F$		10V	
R413	ERD12FJ270	Carbon	27 $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C311	ECEA10V47L	Electrolytic	47 $\mu F$		10V	
R701	ERD14TJ182	Carbon	1.8K $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C312	ECQM05473KZ	Polyester	0.047 $\mu F$	$\pm 10\%$	50V	
R702	ERD14TJ151	Carbon	150 $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C313	ECQM05683KZ	Polyester	0.068 $\mu F$	$\pm 10\%$	50V	
R703	ERD14TJ821	Carbon	820 $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C314	ECEA16V33L	Electrolytic	33 $\mu F$		16V	
R705	ERC12GJ391	Solid	390 $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C315	ECQM05103KZ	Polyester	0.01 $\mu F$	$\pm 10\%$	50V	
R706	ERD14TJ221	Carbon	220 $\Omega$	$\pm 5\%$	$\frac{1}{4}W$		C316	ECEA16V470L	Electrolytic	470 $\mu F$		16V	
R708	TRF2SJ330	Non Flame	33 $\Omega$	$\pm 5\%$	2W		C317	ECQM05104KZ	Polyester	0.1 $\mu F$	$\pm 10\%$	50V	
<b>CAPACITORS</b>							C319	ECKD1H103PF	Ceramic	0.01 $\mu F$ +100%—0%		50V	
C101	ECCD1H560K	Ceramic	56PF	$\pm 10\%$	50V		C401	ECQM05473KZ	Polyester	0.047 $\mu F$	$\pm 10\%$	50V	
C102	ECCD1H330K	Ceramic	33PF	$\pm 10\%$	50V		C402	ECQM05822KZ	Polyester	8200PF	$\pm 10\%$	50V	
C103	ECCD1H390K	Ceramic	39PF	$\pm 10\%$	50V		C403	ECQM05223KZ	Polyester	0.022 $\mu F$	$\pm 10\%$	50V	
C104	ECCD1H270K	Ceramic	27PF	$\pm 10\%$	50V		C404	ECQM05224KZ	Polyester	0.22 $\mu F$	$\pm 10\%$	50V	
C105	ECCD1H680K	Ceramic	68PF	$\pm 10\%$	50V		C405	ECEA25V4R7L	Electrolytic	4.7 $\mu F$		25V	
C106	ECCD1H020CC	Ceramic	2PF	$\pm 0.25PF$	50V		C406	ECQM05104KZ	Polyester	0.1 $\mu F$	$\pm 10\%$	50V	
C107	ECCD1H030CC	Ceramic	3PF	$\pm 0.25PF$	50V		C407	ECQM05333JZ	Polyester	0.033 $\mu F$	$\pm 5\%$	50V	
C108	ECCD1H060DC	Ceramic	6PF	$\pm 0.5PF$	50V		C408	ECQM05682KZ	Polyester	6800PF	$\pm 10\%$	50V	
C109	ECCD1H060DC	Ceramic	6PF	$\pm 0.5PF$	50V		C409	ECQM05153KZ	Polyester	0.015 $\mu F$	$\pm 10\%$	50V	
C110	ECKD1H103PF	Ceramic	0.01 $\mu F$ +100%—0%		50V		C410	ECKD2H681MB	Ceramic	680PF	$\pm 20\%$	500V	
C112	ECKD1H103PF	Ceramic	0.01 $\mu F$ +100%—0%		50V		C411	ECKD2H102MB	Ceramic	1,000PF	$\pm 20\%$	500V	
C113	ECCD1H101K	Ceramic	100PF	$\pm 10\%$	50V		C412	ECQM6333KZ	Polyester	0.033 $\mu F$	$\pm 10\%$	600V	
C115	ECCD1H150K	Ceramic	15PF	$\pm 10\%$	50V		C413	ECKD1H103PF	Ceramic	0.01 $\mu F$ +100%—0%		50V	
C116	ECCD1H103PF	Ceramic	0.01 $\mu F$ +100%—0%		50V		C415	ECKD2H391KB	Ceramic	390PF	$\pm 10\%$	500V	
C119	ECCD1H680J	Ceramic	68PF	$\pm 5\%$	50V		C416	ECQE10223KZ	Polyester	0.022 $\mu F$	$\pm 10\%$	1KV	
C120	ECCD1H271J	Ceramic	270PF	$\pm 5\%$	50V		C417	ECEA160V3R3	Electrolytic	3.3 $\mu F$		160V	
C121	ECCD1H330J	Ceramic	33PF	$\pm 5\%$	50V		C418	ECEA16V1000L	Electrolytic	1,000 $\mu F$		16V	
C122	ECCD1H100D	Ceramic	10PF	$\pm 0.5PF$	50V		C423	ECKD2H472PE	Ceramic	4,700PF+100%—0%		500V	
C123	ECCD1H050D	Ceramic	5PF	$\pm 0.5PF$	50V		C508	ECEA16V1000L	Electrolytic	1,000 F		16V	
C124	ECCD1H050D	Ceramic	5PF	$\pm 0.5PF$	50V		C424	ECKD2H391KB	Ceramic	390PF	$\pm 10\%$	500V	
C125	ECKD1H103PF	Ceramic	0.01 $\mu F$ +100%—0%		50V		C425	ECKD2H102MB	Ceramic	1,000PF	$\pm 20\%$	500V	
C126	ECKD1H103PF	Ceramic	0.01 $\mu F$ +100%—0%		50V		C426	ECKD1H102MB	Ceramic	1,000PF	$\pm 20\%$	50V	
C127	ECKD1H103PF	Ceramic	0.01 $\mu F$ +100%—0%		50V		C701	ECEA10V33L	Electrolytic	33 $\mu F$		10V	
C128	ECKD1H103PF	Ceramic	0.01 $\mu F$ +100%—0%		50V		C702	ECEA25V2200L	Electrolytic	2,200 $\mu F$		25V	
C129	ECKD1H103PF	Ceramic	0.01 $\mu F$ +100%—0%		50V		C703	ECKD2H472PE	Ceramic	4,700PF+100%—0%		500V	
C130	ECEA16V10L	Electrolytic	10 $\mu F$		16V		C704	ECKD2H472PE	Ceramic	4,700PF+100%—0%		500V	
C131	ECKD1H103PF	Ceramic	0.01 $\mu F$ +100%—0%		50V		C705	ECKD2H472PE	Ceramic	4,700PF+100%—0%		500V	
							C706	ECKD2H472PE	Ceramic	4,700PF+100%—0%		500V	
							C707	ECEA6V100L	Electrolytic	100 $\mu F$		6V	



REF. NO.	PART NO.	PART NAME & DESCRIPTION	REF. NO.	PART NO.	PART NAME & DESCRIPTION
C761	ECKD2H103PE	Ceramic 0.01 $\mu$ F+100%—0%500V	VR71	EVTS3AA00B23	AVR 2K $\Omega$ B
<b>CERAP</b>			<b>TRANS</b>		
X141	EFCA5R5M1	5.5MHZ Cerap	T401	TLF80805-1 TJT8503MSE TJT8707M TJS25640	Flyback Transformer 3-P Socket Housing Socket Housing Terminal Picture Tube Socket
<b>VARIAELE RESISTORS</b>			VR64	EVTS0AA00B26	Focus Control 2M $\Omega$ B
VR18	EVTS3AA00B52	IF AGC 500 $\Omega$ B	R601	ERD14TJ152	Carbon 1.5K $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
VR19	EVTS3AA00B13	RF AGC 1K $\Omega$ B	R602	ERD14TJ474	Carbon 470K $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
VR31	EVD66A25KA15	V. Hold 100K $\Omega$ B			
VR32	EVTS3AA00B24	V. Hight 20k $\Omega$ B			
VR33	EVTS3AA00B52	V. Lih 500 $\Omega$ B			